Applying regional planning schemes in East Jutland, Denmark examples from Copenhagen, Montpellier and Portland

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Published in:
Book of abstracts

Publication date:
2010

Document version
Peer reviewed version

Applying regional planning schemes in East Jutland, Denmark

Examples from Copenhagen, Montpellier and Portland

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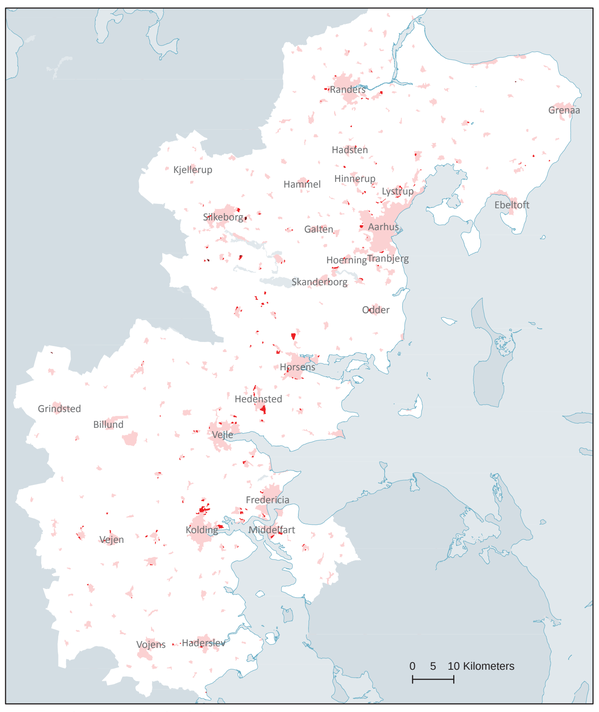
Issue

East Jutland is lacking a regional planning scheme. We apply approaches from Copenhagen/Fingerplan, Montpellier/SCoT and Portland/Urban Growth Boundary and evaluate their potential to guide land use changes.

Conclusion

The three approaches shown here do not present an ideal planning scheme for the region. A focus on mass-transit corridors like the Fingerplan excludes many areas in East Jutland, as the rail-network is not that dense as in Copenhagen. The SCoT approach is limited by the fact that no official delimitation of "valuable landscape" has been done; and the urban growth boundaries seem rather fragmented for a regional scheme which should also communicated a common vision. However, a regional growth strategy for East Jutland could integrate elements of different approaches, taking into consideration the region's particular urban structure.

Introduction
Land use changes 2000 - 2006



Urban morphological zones in 2000

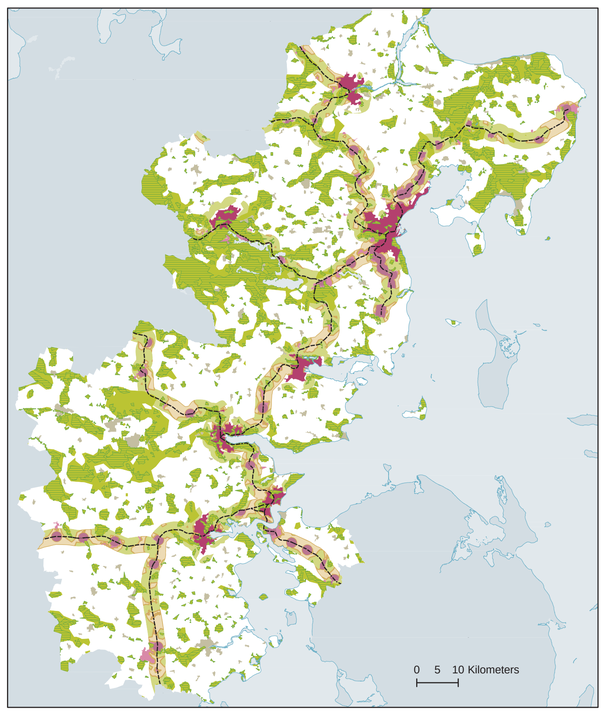
Land cover changes to artificial surface 2000 - 2006

- conversion of agricultural land (2 974 ha)
- conversion of natural land (84 ha)

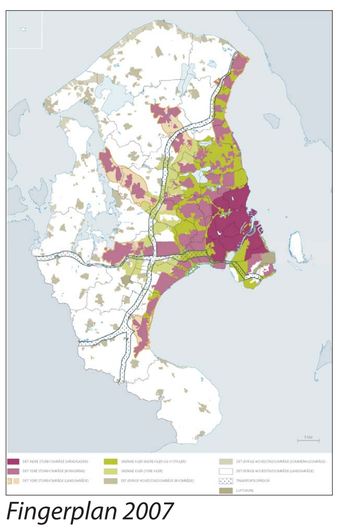
In the eastern part of Jutland, Denmark, a polycentric urban region is emerging. Besides Århus, the second biggest city of Denmark, several medium-sized cities are located in the area. The region is expected to experience further urbanisation which might result in urban sprawl and threaten valuable landscapes. A common regional planning scheme is discussed for a while, but nothing is agreed on yet. As an input to that discussion we **apply three existing regional planning schemes** to the case study region.

The three planning schemes are well known for their simple and clear approach: The **Fingerplan of Copenhagen** urban region, the **SCoT (Territorial Coherence Scheme) of Montpellier** Agglomeration and the **Urban Growth Boundary of Portland**. By the way of an ex post thought experiment we applied the three approaches in GIS to the situation in the year 2000 and discussed hypothetical effects of them regarding actual land use changes between 2000 and 2006, documented by CORINE. In that period around 3,000 hectars of natural or agricultural land got converted into artificial land cover as housing, but also commercial, new infrastructure etc.

A "Fingerplan" for East Jutland?



- Core cities
- 1200 m from station
- Other commuter cities
- Existing green structure
- Green areas - high potential
- Green areas - low potential
- Inner rural areas
- Other towns
- Other rural areas
- Passenger railroad

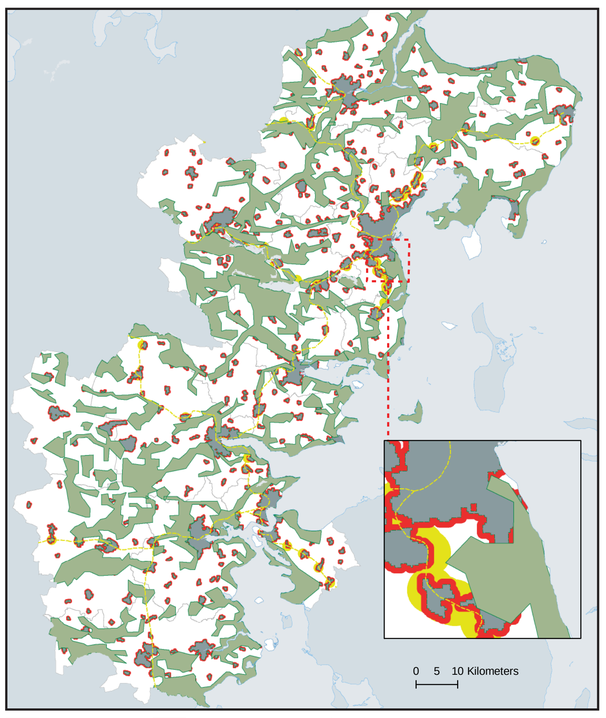


Fingerplan 2007

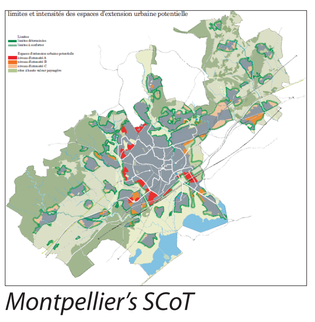
The Fingerplan was elaborated in 1947 but became first in 2007 a legal planning document. However, its simple principles of development along the commuter rail lines and the protection of green wedges in between them guided spatial development in Copenhagen since then.

For East Jutland we copied the "**station proximity principle**", saying that urban development of a certain size is only allowed within a certain distance (1200 m) from railroad stations. Instead of green wedges, which are hard to define in a polycentric region, we identified important green areas by using CORINE land cover data. The application shows that only around **one third of all urban development happen within** the area dedicated for urban growth. The **Fingerplan** would foster a development aligned along mass-transport corridors.

An inverse "SCoT" for East Jutland?



- Valuable landscape
- Urban areas
- Other areas
- Potential urban extension
- Railroad station proximity
- Determined limit
- Undetermined limit
- Passenger railroad

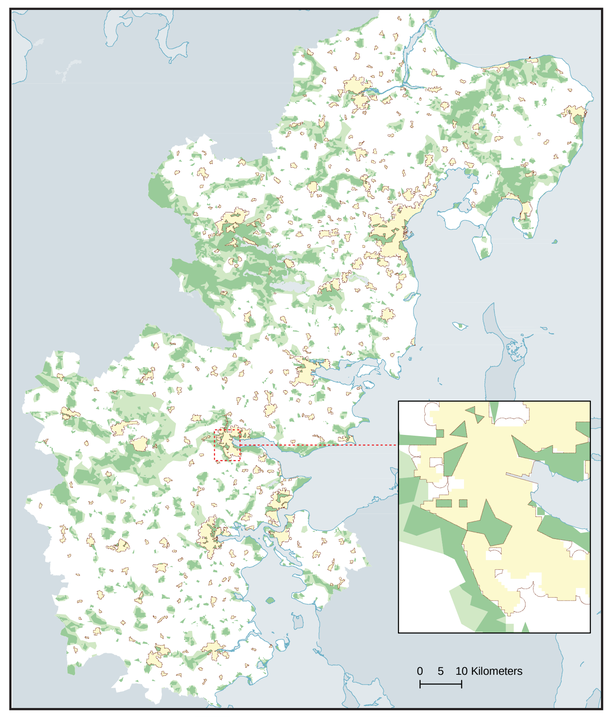


Montpellier's SCoT

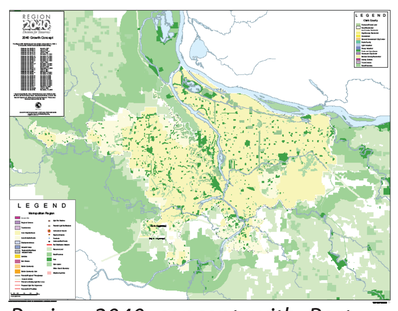
In the Montpellier case, the planning scheme has the particularity of having a "sight inversion". In other words, the **main element is the landscape** and not the existing built-up area. Thus, the landscape is presented as an integrated part of the reflection on regional development. In fact this "sight inversion" protects natural and agricultural areas of any changes; in parallel the overall spatial strategy also privileges urban containment by limiting new urban development within existing urban area, at its direct proximity or along main urban transport corridors.

In East Jutland, the concept of "valuable landscapes" serves as a basis for our study allowing at applying the "sight inversion" approach made in Montpellier. As a result, by taking into consideration the main ideas found in the SCoT, it has been shown that **14 % of** the land cover **changes** of agricultural and natural areas into artificial areas in East Jutland between 2000 and 2006 happened **in "valuable landscapes"** areas.

Urban Growth Boundaries for East Jutland?



- Urban Growth Boundary
- Rural area
- High natural potential
- Existing natural areas
- Urban area in 2000



Region 2040 concept with Portland's urban growth boundary

In 1979 the newly created Metropolitan council of Portland (Metro) established a first urban growth boundary (UGB) around Portland, following the adoption of the Senate Bill 100 in 1973 and new state wide planning goals. Metro is required to **maintain a 20-year inventory of developable land within the UGB**, to be revised every 7 years. Another important aspect is the preservation of important resource land (farm and forest land).

With population projections from 2000 for Eastern Jutland we calculated a future land use demand for 2020. The necessary area was allocated as close as possible to existing urban area, but outside important green areas. Only **18 %** of the growth between 2000 and 2006 happened **inside** this fictive **UGB**. The UGB would foster compact city development in the region.

Land cover changes 2000 - 2006

	total
from agriculture or natural to artifical areas	3059 ha

Fingerplan		
inside Fingerplan	**outside Fingerplan**	**existing/ potential green areas**
1002 ha 33%	1266 ha 41%	791 ha 26%

SCoT (Territorial coherence scheme)		
within urban areas and station proximity	**other areas**	**within valuable landscapes**
886 ha 29%	1757 ha 57%	416 ha 14%

Urban Growth Boundaries		
inside UGB	**outside UGB: rural**	**outside UGB: existing/ high potential natural areas**
546 ha 18%	2248 ha 73%	265 ha 9%

Urban extension in Skanderborg, East Jutland (Photo: Skanderborg Kommune)

Commuter train station in one "Finger" in a rural area around Copenhagen

"Agricultural and natural areas" around Montpellier

Dense housing development along Portland's urban growth boundary

Acknowledgement

This work was conducted during our PhD projects, co-financed by the Faculty of Life Sciences / University of Copenhagen, Danish Strategic Research Council, Centre for Strategic Urban Research / Realdania Research and EU-FP6 project PLUREL.